

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2000-030689

(43)Date of publication of application : 28.01.2000

(51)Int.Cl.

H01M 2/30

(21)Application number : 11-174633

(71)Applicant : HONDA MOTOR CO LTD

(22)Date of filing : 06.06.1990

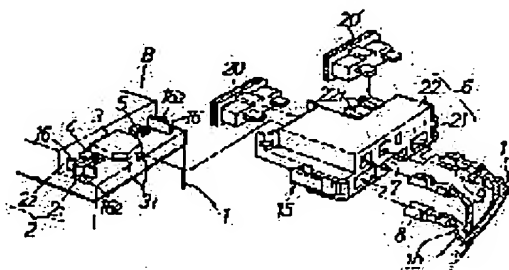
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## (54) BATTERY TERMINAL CONNECTING STRUCTURE

## (57)Abstract:

**PROBLEM TO BE SOLVED:** To improve battery attaching/detaching workability and to replace a fuse without separating a coupler from a battery case by fitting and connecting a coupler to a battery case freely removably, forming a fuse holder, into which a fuse is inserted and fitted in the opposite direction to the coupler fitting direction, and projecting the fuse holder above the upper face of the battery case.

**SOLUTION:** In a battery case 1 provided with a stepped part 2, a guide projection 3 is formed integrally. On a side wall 22, a plus terminal 4 and a minus terminal 5 are arranged on the left and right sides of the guide projection 3. In a coupler 6 provided with a main body 21 fitted in the stepped part 2, a guide groove 7 having a cross sectional shape equal to that of the guide projection 3 is opened. For preventing fall out, elastic locking claws 15 are arranged on both sides of the main body 21, while locked parts 16 are arranged on the battery case 1 side. Because a blade fuse 20 and a spare fuse 20' are held in a fuse holder 22 together while the coupler 6 is protruded above the battery case 1 upper face, a fuse can be replaced without separating the battery case 1.



## LEGAL STATUS

[Date of request for examination] 05.07.1999

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number] 3224218

[Date of registration] 24.08.2001

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

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CLAIMS

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[Claim(s)]

[Claim 1] In the connection structure of the dc-battery terminal connected in the power [ which projects from a dc-battery case (1) ] cord (10,101,102; 11) which corresponds the dc-battery terminal (4, 41, 42; 5) of a pair at least, respectively The coupler (6) which has the coupler terminal (8, 81, 82; 9) which fixed the edge of said power cord (10,101 102; 11) Connection structure of the dc-battery terminal which fits into said dc-battery case (1) free [ attachment and detachment ] through a guide projection (3) and a guide slot (7), and comes to combine said coupler terminal (8, 81, 82; 9) with coincidence to a dc-battery terminal (4, 41, 42, 5).

[Claim 2] Connection structure of the dc-battery terminal according to claim 1 characterized by preparing a fuse holder (12) in the guide projection (3) formed in said dc-battery case (1).

[Claim 3] Connection structure of the dc-battery terminal according to claim 1 characterized by preparing a fuse holder (12 22) in said coupler (6).

[Claim 4] Connection structure of the dc-battery terminal according to claim 1 characterized by having formed the stop pawl (15) in said coupler (6), and preparing the stopped section (16) with which this stop pawl (15) engages in said dc-battery case (1).

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DETAILED DESCRIPTION

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## [Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the structure for connecting a power cord to the terminal in the dc-battery for cars for supplying electric power to a starter or various electronic autoparts etc.

[0002]

[Description of the Prior Art] After carrying out fitting of the pore of the splicing fitting with which the edge of a power cord was equipped to the terminal which projects from a dc-battery case in the dc-battery for automobiles conventionally, the approach of connecting an electric code with said terminal is used by binding said splicing fitting tight with a bolt and making the diameter of this pore reduce (for example, refer to JP,56-21365,U).

[0003]

[Problem(s) to be Solved by the Invention] However, since it was necessary by the above-mentioned conventional approach to tighten the bolt of the splicing fitting of both by the side of a plus terminal and a minus terminal or whenever it detaches and attaches a power cord, and it was necessary to loosen, the activity was troublesome.

[0004] This invention was made in view of the above-mentioned situation, and aims at offering the connection structure of the dc-battery terminal which can detach and attach a power cord easily by one-touch.

[0005]

[Means for Solving the Problem] In the connection structure of the dc-battery terminal connected in the power [ with which this invention projects from a dc-battery case in order to attain said purpose ] cord which corresponds the dc-battery terminal of a pair at least, respectively The coupler which has the coupler terminal which fixed the edge of said power cord is fitted into said dc-battery case free [ attachment and detachment ] through a guide projection and a guide slot, and it is characterized [ 1st ] by coming to combine said coupler terminal with coincidence to a dc-battery terminal.

[0006] Moreover, this invention is characterized [ 2nd ] by preparing a fuse holder in the guide projection formed in said dc-battery case in addition to said 1st description.

[0007] Furthermore, in addition to said 1st description, this invention is characterized [ 3rd ] by preparing a fuse holder in said coupler.

[0008] Furthermore, this invention is characterized [ 4th ] by in addition to said 1st description, having formed the stop pawl in the coupler and preparing the stopped section with which this stop pawl engages in a dc-battery case again.

[0009]

[work ---] for According to the 1st description of this invention equipped with the above-mentioned configuration, by making a guide projection engage with a guide slot, and stuffing a coupler into a dc-battery case side, the coupler and dc-battery case are combined with one, and the coupler terminal prepared in coincidence at the coupler is automatically combined with the dc-battery terminal prepared in the dc-battery. At this time, the connection direction of a coupler can be easily checked by a guide projection and the guide slot.

[0010] Moreover, according to the 2nd and 3rd description of this invention, since it is equipped with a fuse holder using a dc-battery case or a coupler, it becomes unnecessary to equip with a fuse holder in the middle of wire harness, and, as a result, management of wire harness is performed easily.

[0011] Furthermore, according to the 4th description of this invention, the connection and the lock of a coupler to a dc-battery case can be performed by one-touch, and the maintenance engine performance improves.

[0012]

[Embodiment of the Invention] The gestalt of operation of this invention is concretely explained below based on the example of this invention illustrated to the accompanying drawing.

[0013] The perspective view of the dc-battery which drawing 1 shows the 1st example of this invention in an accompanying drawing, and a coupler, The perspective view in which the perspective view in which drawing 2 shows the 2nd example, and drawing 3 show the plugging chart of the 2nd example, and drawing 4 shows the 3rd example, The perspective view in which the perspective view in which drawing 5 shows the 4th example, and drawing 6 show the part plan of the 4th example, and drawing 7 shows the 5th example, The perspective view in which drawing 8 shows the 6th example, 9 section expansion perspective view of drawing 9 drawing 8, the top view of the coupler which drawing 10 shows the 7th example, and drawing 11 are the 11 direction view Fig. of drawing 10, and drawing in which drawing 12 - drawing 15 show the 1st of said 1st example - the 4th modification, respectively.

[0014] Drawing 1 shows the 1st example of this invention, the dc-battery case 1 formed in the outline rectangular

parallelepiped configuration of the dc-battery B for automobiles equips the upper part of one longitudinal direction end face with the step 2, and the guide projection 3 is formed in the center of the step 2 along with said longitudinal direction at one. The guide projection 3 is the bottom wall 21 of a step 2. Side attachment wall 22 It connects and is the bottom wall 21. A connection is the slot 31 on the pair. It is formed in the narrow width. bottom wall 21 of said step 2 \*\*\*\* — the plus terminal 4 and the minus terminal 5 as a dc-battery terminal are prepared so that it may be located in the right-and-left both sides of the guide projection 3, and the tip is crooked at the right angle towards said longitudinal direction.

[0015] On the other hand, the coupler 6 is formed in one with synthetic resin, and the guide slot 7 which has the same cross-section configuration as said guide projection 3 is carrying out opening to the end face 61 of one of these. End face 61 of a coupler 6 The coupler terminals 8 and 9 with which said plus terminal 4 and minus terminal 5 can fit in, respectively are laid under the right-and-left both sides, and the electric codes 10 and 11 which extend to the exterior of a coupler 6 are connected with these coupler terminals 8 and 9. that in which the coupler terminals 8 and 9 crooked for it and formed the metal plate which has elasticity — it is — the interior — a pressure predetermined in said plus terminal 4 and minus terminal 5 — with, it is pressed fit.

[0016] Next, an operation of the example of this invention equipped with the above-mentioned configuration is explained.

[0017] The both-ends children 4 and 5 of Dc-battery B and connection of the power cords 10 and 11 are performed by stuffing a coupler 6 into the dc-battery case 1 side in the condition of having made the guide slot 7 engaging with the guide projection 3 of the dc-battery case 1. End face 61 of a coupler 6 Side attachment wall 22 of a step 2 If it moves forward to the contacting location, the plus terminal 4 and the minus terminal 5 will be fitted in and connected to the coupler terminals 8 and 9, respectively. Since the guide slot 7 does not engage with the guide projection 3 even if it is going to insert by making a coupler 6 into vertical reverse at this time, the connection direction of a coupler 6 can be checked easily.

[0018] Drawing 2 and drawing 3 show the 2nd example of this invention, and the guide projection 3 formed in the dc-battery case 1 of this example is equipped with the fuse holder 12 which can be freely detached and attached to that building envelope. The plus terminal of Dc-battery B is the plus pole of this dc-battery B to the direct coupler terminal 81. The 1st plus terminal 41 connected The fuse with which said fuse holder 12 was equipped from the plus pole of Dc-battery B is minded, and it is the coupler terminal 82. The 2nd plus terminal 42 to connect It consists of two terminals. And said 1st plus terminal 41 Electric code 101 While minding and connecting with the very large starter 13 of power consumption, it is the 2nd plus terminal 42. Power consumption is connected to other electronic autoparts 14, such as comparatively few lamps, and it has prevented that said fuse melts by this at the time of use of a starter 13.

[0019] It \*\*, it is possible to acquire the same operation effectiveness as a previous example also by this example, and since the need of infixing a fuse holder in the middle of wire harness is lost in addition to it, management of said wire harness in the dc-battery case 1 circumference becomes easy.

[0020] Drawing 4 shows the 3rd example of this invention, and this example has the description at the point of having equipped the interior of a coupler 6 with the fuse holder 12. And the coupler terminal 8 connected to the plus terminal 4 of Dc-battery B is the electric code 101 prolonged in the direct starter 13. Electric code 102 prolonged in the electronic autoparts 14 besides a lamp through the fuse with which the interior of a fuse holder 12 was equipped while connecting It connects.

[0021] It \*\*, it becomes possible to manage wire harness easily also in this example, and it becomes possible to do so the same operation effectiveness as the 2nd previous example.

[0022] Drawing 5 and drawing 6 show the 4th example of this invention, and that the coupler 6 combined with the dc-battery case 1 should be locked, this example has the description at the point of having formed the stopped section 16 to which said stop pawl 15 engages with the dc-battery case 1 side while forming the stop pawl 15 in a coupler 6 side. That is, it is supported pivotably free [ closing motion ] through a pin 18 by the bearing bracket 17 which protruded on the right-and-left both sides of a coupler 6, and said stop pawl 15 is the stop side 151. Guide side 152 It is from-cartridge-energized by the spring 19 in the direction which the formed point closes. On the other hand, in the dc-battery case 1 side, it is the bottom wall 21 of a step 2. Side attachment wall 22 Said stopped section 16 to connect is formed in one, and it is the stop side 151 of said stop pawl 15 in the center. Engaged stop hole 161 Opening is carried out.

[0023] If according to this example guide slot 7 \*\* of a coupler 6 is made to engage with the guide projection 3 of the dc-battery case 1 and is pushed in Guide side 152 By contacting the edge of the stopped section 16, the stop pawl 15 resists a spring 19 and is extended. Said guide side 152 If the edge of the stopped section 16 is overcome, the stop pawl 15 will close by the resiliency of said spring 19, and it is the stop side 151. Stop hole 161 of the stopped section 16 It is engaged. Thereby, it is prevented certainly that a coupler 6 is omitted from the dc-battery case 1 with vibration etc. Moreover, what is necessary is just to draw out the coupler 6 from the dc-battery case 1, after making it secede from the stopped section 16 in order to remove a coupler 6, resisting a spring 19 and making it extend the stop pawl 15 with a finger.

[0024] Drawing 7 is the stop hole [ in / the 5th example of this invention is shown and / said 4th example ] 161. Stop projection 162 which can engage with the stop pawl 15 which replaced with the tabular stopped section 16 which it has, and was formed in the coupler 6 side It has the description at the point of having formed the stopped section 16 which it has. And the same operation effectiveness as the 4th above-mentioned example can be acquired also according to this example.

[0025] Drawing 8 and drawing 9 show the 6th example of this invention, and this example has the description at the point of having made the coupler 6 supporting blade fuse 20' of the blade fuse 20 and a spare to coincidence. That is, this coupler 6 is equipped with the body section 21 which fits into the step 2 of the dc-battery case 1, and the guide slot 7 which engages with the guide projection 3 of the dc-battery case 1 like said 5th example, the coupler terminals 8 and 9 linked to the plus terminal 4 and the minus terminal 5 of Dc-battery B, and the stop pawl 15 which can engage with the stopped section 16 of the dc-battery case 1 are formed in this body section 21. And support pawl 221 of the pair which presses and holds the end face of the support hole with which the blade fuse 20 is inserted in the fuse holder 22 formed in the top face of the body section 21 of said coupler 6 at one, and blade fuse 20' of a spare It is prepared. And when the dc-battery case 1 is equipped with a coupler 6, said both fuses 20 and 20' are supported in the condition of having slept so that the top face of the dc-battery case 1 might be met.

[0026] It \*\*, and according to this example, exchange of a fuse 20 and 20' can be performed, equipped [ it not only can hold actually used blade fuse 20' of the blade fuse 20 and a spare to coincidence but ] with a coupler 6, since a fuse 20 and 20' projected on the top face of the dc-battery case 1. Moreover, since it is supported so that both the fuses 20 and 20' may meet the top face of the dc-battery case 1, an appearance is good and the height of Dc-battery B does not become extremely high.

[0027] Drawing 10 and drawing 11 show the 7th example of this invention, and this example is three support pawls 222 about three sides of the periphery of blade fuse 20' of a spare. It has the description at the supported point and it is possible to acquire the same operation effectiveness as said 6th example also according to this example.

[0028] As mentioned above, although the example of this invention was explained in full detail, this invention can perform various small design changes, without deviating from this invention which is not limited to said example and indicated by the claim.

[0029] For example, the location of the guide slot 7 formed in a guide projection [ which is formed in the dc-battery case 1 side ] 3 and coupler 6 side, a configuration, a number, etc. are not limited to the thing of each of said example, but can be changed suitably. Namely, the thing which forms the guide projection 3 and the guide slot 7 in the vertical direction, and combines a coupler 6 with the body 1 of a dc-battery from the upper part like the 1st modification of said 1st example shown in drawing 12 , What formed two guide projections 3 each and guide slots 7 in the dc-battery case 1 and coupler 6 side like the 2nd modification similarly shown in drawing 13 , What formed the guide projection 3 in the coupler 6 side while forming the guide slot 7 in the dc-battery case 1 side like the 3rd modification similarly shown in drawing 14 , Various design changes, such as what formed two guide slots 7 each and guide projections 3 in the dc-battery case 1 and coupler 6 side, are possible like the 4th modification similarly shown in drawing 15 .

[0030] Moreover, in the 4-7th examples of the above, if a coupler 6, the stop pawl 15, and a bearing bracket 17 are formed in one with flexible synthetic resin and the stop pawl 15 is made to open and close by the elastic deformation of the bearing bracket 17, the pin 18 which supports the stop pawl 15 pivotably, and the spring 19 for energization are omissible.

[0031]

[Effect of the Invention] Since an electric code can be connected by one-touch for a dc-battery terminal as mentioned above only by making the guide slot established in another side carry out fitting of the guide projection prepared in one side of a coupler to a dc-battery case according to the 1st description of this invention, the workability of dc-battery attachment and detachment improves sharply. Moreover, since the direction of connection is uniquely determined by a guide projection and the guide slot, the connection direction of a coupler can be checked easily.

[0032] Moreover, according to the 2nd and 3rd description of this invention, since it is equipped with a fuse holder using a dc-battery case or a coupler, it becomes unnecessary to equip with a fuse holder in the middle of wire harness, and, as a result, management of wire harness becomes easy.

[0033] Furthermore, according to the 4th description of this invention, the connection and the lock of a coupler to a dc-battery case can be performed by one-touch, and the maintenance engine performance improves.

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TECHNICAL FIELD

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[Field of the Invention] This invention relates to the structure for connecting a power cord to the terminal in the dc-battery for cars for supplying electric power to a starter or various electronic autoparts etc.

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PRIOR ART

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[Description of the Prior Art] After carrying out fitting of the pore of the splicing fitting with which the edge of a power cord was equipped to the terminal which projects from a dc-battery case in the dc-battery for automobiles conventionally, the approach of connecting an electric code with said terminal is used by binding said splicing fitting tight with a bolt and making the diameter of this pore reduce (for example, refer to JP,56-21365,U).

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EFFECT OF THE INVENTION

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[Effect of the Invention] Since an electric code can be connected by one-touch for a dc-battery terminal as mentioned above only by making the guide slot established in another side carry out fitting of the guide projection prepared in one side of a coupler to a dc-battery case according to the 1st description of this invention, the workability of dc-battery attachment and detachment improves sharply. Moreover, since the direction of connection is uniquely determined by a guide projection and the guide slot, the connection direction of a coupler can be checked easily.

[0032] Moreover, according to the 2nd and 3rd description of this invention, since it is equipped with a fuse holder using a dc-battery case or a coupler, it becomes unnecessary to equip with a fuse holder in the middle of wire harness, and, as a result, management of wire harness becomes easy.

[0033] Furthermore, according to the 4th description of this invention, the connection and the lock of a coupler to a dc-battery case can be performed by one-touch, and the maintenance engine performance improves.

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TECHNICAL PROBLEM

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[Problem(s) to be Solved by the Invention] However, since it was necessary by the above-mentioned conventional approach to tighten the bolt of the splicing fitting of both by the side of a plus terminal and a minus terminal or whenever it detaches and attaches a power cord, and it was necessary to loosen, the activity was troublesome. [0004] This invention was made in view of the above-mentioned situation, and aims at offering the connection structure of the dc-battery terminal which can detach and attach a power cord easily by one-touch.

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MEANS

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[Means for Solving the Problem] In the connection structure of the dc-battery terminal connected in the power [ with which this invention projects from a dc-battery case in order to attain said purpose ] cord which corresponds the dc-battery terminal of a pair at least, respectively The coupler which has the coupler terminal which fixed the edge of said power cord is fitted into said dc-battery case free [ attachment and detachment ] through a guide projection and a guide slot, and it is characterized [ 1st ] by coming to combine said coupler terminal with coincidence to a dc-battery terminal.

[0006] Moreover, this invention is characterized [ 2nd ] by preparing a fuse holder in the guide projection formed in said dc-battery case in addition to said 1st description.

[0007] Furthermore, in addition to said 1st description, this invention is characterized [ 3rd ] by preparing a fuse holder in said coupler.

[0008] Furthermore, this invention is characterized [ 4th ] by in addition to said 1st description, having formed the stop pawl in the coupler and preparing the stopped section with which this stop pawl engages in a dc-battery case again.

[0009]

[work —] for According to the 1st description of this invention equipped with the above-mentioned configuration, by making a guide projection engage with a guide slot, and stuffing a coupler into a dc-battery case side, the coupler and dc-battery case are combined with one, and the coupler terminal prepared in coincidence at the coupler is automatically combined with the dc-battery terminal prepared in the dc-battery. At this time, the connection direction of a coupler can be easily checked by a guide projection and the guide slot.

[0010] Moreover, according to the 2nd and 3rd description of this invention, since it is equipped with a fuse holder using a dc-battery case or a coupler, it becomes unnecessary to equip with a fuse holder in the middle of wire harness, and, as a result, management of wire harness is performed easily.

[0011] Furthermore, according to the 4th description of this invention, the connection and the lock of a coupler to a dc-battery case can be performed by one-touch, and the maintenance engine performance improves.

[0012]

[Embodiment of the Invention] The gestalt of operation of this invention is concretely explained below based on the example of this invention illustrated to the accompanying drawing.

[0013] The perspective view of the dc-battery which drawing 1 shows the 1st example of this invention in an accompanying drawing, and a coupler, The perspective view in which the perspective view in which drawing 2 shows the 2nd example, and drawing 3 show the plugging chart of the 2nd example, and drawing 4 shows the 3rd example, The perspective view in which the perspective view in which drawing 5 shows the 4th example, and drawing 6 show the part plan of the 4th example, and drawing 7 shows the 5th example, The perspective view in which drawing 8 shows the 6th example, 9 section expansion perspective view of drawing 9 drawing 8, the top view of the coupler which drawing 10 shows the 7th example, and drawing 11 are the 11 direction view Fig. of drawing 10, and drawing in which drawing 12 - drawing 15 show the 1st of said 1st example - the 4th modification, respectively.

[0014] Drawing 1 shows the 1st example of this invention, the dc-battery case 1 formed in the outline rectangular parallelepiped configuration of the dc-battery B for automobiles equips the upper part of one longitudinal direction end face with the step 2, and the guide projection 3 is formed in the center of the step 2 along with said longitudinal direction at one. The guide projection 3 is the bottom wall 21 of a step 2. Side attachment wall 22 It connects and is the bottom wall 21. A connection is the slot 31 on the pair. It is formed in the narrow width. bottom wall 21 of said step 2 \*\*\*\* — the plus terminal 4 and the minus terminal 5 as a dc-battery terminal are prepared so that it may be located in the right-and-left both sides of the guide projection 3, and the tip is crooked at the right angle towards said longitudinal direction.

[0015] On the other hand, the coupler 6 is formed in one with synthetic resin, and the guide slot 7 which has the same cross-section configuration as said guide projection 3 is carrying out opening to the end face 61 of one of these. End face 61 of a coupler 6 The coupler terminals 8 and 9 with which said plus terminal 4 and minus terminal 5 can fit in, respectively are laid under the right-and-left both sides, and the electric codes 10 and 11 which extend to the exterior of a coupler 6 are connected with these coupler terminals 8 and 9. that in which the coupler terminals 8 and 9 crooked for it and formed the metal plate which has elasticity — it is — the interior — a pressure predetermined in said plus terminal 4 and minus terminal 5 — with, it is pressed fit.

[0016] Next, an operation of the example of this invention equipped with the above-mentioned configuration is explained.

[0017] The both-ends children 4 and 5 of Dc-battery B and connection of the power cords 10 and 11 are performed by stuffing a coupler 6 into the dc-battery case 1 side in the condition of having made the guide slot 7 engaging with the guide projection 3 of the dc-battery case 1. End face 61 of a coupler 6 Side attachment wall 22 of a step 2 If it moves forward to the contacting location, the plus terminal 4 and the minus terminal 5 will be fitted in and connected to the coupler terminals 8 and 9, respectively. Since the guide slot 7 does not engage with the guide projection 3 even if it is going to insert by making a coupler 6 into vertical reverse at this time, the connection direction of a coupler 6 can be checked easily.

[0018] Drawing 2 and drawing 3 show the 2nd example of this invention, and the guide projection 3 formed in the dc-battery case 1 of this example is equipped with the fuse holder 12 which can be freely detached and attached to that building envelope. The plus terminal of Dc-battery B is the plus pole of this dc-battery B to the direct coupler terminal 81. The 1st plus terminal 41 connected The fuse with which said fuse holder 12 was equipped from the plus pole of Dc-battery B is minded, and it is the coupler terminal 82. The 2nd plus terminal 42 to connect It consists of two terminals. And said 1st plus terminal 41 Electric code 101 While minding and connecting with the very large starter 13 of power consumption, it is the 2nd plus terminal 42. Power consumption is connected to other electronic autoparts 14, such as comparatively few lamps, and it has prevented that said fuse melts by this at the time of use of a starter 13.

[0019] It \*\*, it is possible to acquire the same operation effectiveness as a previous example also by this example, and since the need of infixing a fuse holder in the middle of wire harness is lost in addition to it, management of said wire harness in the dc-battery case 1 circumference becomes easy.

[0020] Drawing 4 shows the 3rd example of this invention, and this example has the description at the point of having equipped the interior of a coupler 6 with the fuse holder 12. And the coupler terminal 8 connected to the plus terminal 4 of Dc-battery B is the electric code 101 prolonged in the direct starter 13. Electric code 102 prolonged in the electronic autoparts 14 besides a lamp through the fuse with which the interior of a fuse holder 12 was equipped while connecting It connects.

[0021] It \*\*, it becomes possible to manage wire harness easily also in this example, and it becomes possible to do so the same operation effectiveness as the 2nd previous example.

[0022] Drawing 5 and drawing 6 show the 4th example of this invention, and that the coupler 6 combined with the dc-battery case 1 should be locked, this example has the description at the point of having formed the stopped section 16 to which said stop pawl 15 engages with the dc-battery case 1 side while forming the stop pawl 15 in a coupler 6 side. That is, it is supported pivotably free [ closing motion ] through a pin 18 by the bearing bracket 17 which protruded on the right-and-left both sides of a coupler 6, and said stop pawl 15 is the stop side 151. Guide side 152 It is from-cartridge-energized by the spring 19 in the direction which the formed point closes. On the other hand, in the dc-battery case 1 side, it is the bottom wall 21 of a step 2. Side attachment wall 22 Said stopped section 16 to connect is formed in one, and it is the stop side 151 of said stop pawl 15 in the center. Engaged stop hole 161 Opening is carried out.

[0023] If according to this example guide slot 7 \*\* of a coupler 6 is made to engage with the guide projection 3 of the dc-battery case 1 and is pushed in Guide side 152 By contacting the edge of the stopped section 16, the stop pawl 15 resists a spring 19 and is extended. Said guide side 152 If the edge of the stopped section 16 is overcome, the stop pawl 15 will close by the resiliency of said spring 19, and it is the stop side 151. Stop hole 161 of the stopped section 16 It is engaged. Thereby, it is prevented certainly that a coupler 6 is omitted from the dc-battery case 1 with vibration etc. Moreover, what is necessary is just to draw out the coupler 6 from the dc-battery case 1, after making it secede from the stopped section 16 in order to remove a coupler 6, resisting a spring 19 and making it extend the stop pawl 15 with a finger.

[0024] Drawing 7 is the stop hole [ in / the 5th example of this invention is shown and / said 4th example ] 161. Stop projection 162 which can engage with the stop pawl 15 which replaced with the tabular stopped section 16 which it has, and was formed in the coupler 6 side It has the description at the point of having formed the stopped section 16 which it has. And the same operation effectiveness as the 4th above-mentioned example can be acquired also according to this example.

[0025] Drawing 8 and drawing 9 show the 6th example of this invention, and this example has the description at the point of having made the coupler 6 supporting blade fuse 20' of the blade fuse 20 and a spare to coincidence. That is, this coupler 6 is equipped with the body section 21 which fits into the step 2 of the dc-battery case 1, and the guide slot 7 which engages with the guide projection 3 of the dc-battery case 1 like said 5th example, the coupler terminals 8 and 9 linked to the plus terminal 4 and the minus terminal 5 of Dc-battery B, and the stop pawl 15 which can engage with the stopped section 16 of the dc-battery case 1 are formed in this body section 21. And support pawl 221 of the pair which presses and holds the end face of the support hole with which the blade fuse 20 is inserted in the fuse holder 22 formed in the top face of the body section 21 of said coupler 6 at one, and blade fuse 20' of a spare It is prepared. And when the dc-battery case 1 is equipped with a coupler 6, said both fuses 20 and 20' are supported in the condition of having slept so that the top face of the dc-battery case 1 might be met.

[0026] It \*\*, and according to this example, exchange of a fuse 20 and 20' can be performed, equipped [ it not only can hold actually used blade fuse 20' of the blade fuse 20 and a spare to coincidence but ] with a coupler 6, since a fuse 20 and 20' projected on the top face of the dc-battery case 1. Moreover, since it is supported so that both the fuses 20 and 20' may meet the top face of the dc-battery case 1, an appearance is good and the height of Dc-battery B does not become extremely high.

[0027] Drawing 10 and drawing 11 show the 7th example of this invention, and this example is three support pawls

222 about three sides of the periphery of blade fuse 20' of a spare. It has the description at the supported point and it is possible to acquire the same operation effectiveness as said 6th example also according to this example.

[0028] As mentioned above, although the example of this invention was explained in full detail, this invention can perform various small design changes, without deviating from this invention which is not limited to said example and indicated by the claim.

[0029] For example, the location of the guide slot 7 formed in a guide projection [ which is formed in the dc-battery case 1 side ] 3 and coupler 6 side, a configuration, a number, etc. are not limited to the thing of each of said example, but can be changed suitably. Namely, the thing which forms the guide projection 3 and the guide slot 7 in the vertical direction, and combines a coupler 6 with the body 1 of a dc-battery from the upper part like the 1st modification of said 1st example shown in drawing 12 , What formed two guide projections 3 each and guide slots 7 in the dc-battery case 1 and coupler 6 side like the 2nd modification similarly shown in drawing 13 , What formed the guide projection 3 in the coupler 6 side while forming the guide slot 7 in the dc-battery case 1 side like the 3rd modification similarly shown in drawing 14 , Various design changes, such as what formed two guide slots 7 each and guide projections 3 in the dc-battery case 1 and coupler 6 side, are possible like the 4th modification similarly shown in drawing 15 .

[0030] Moreover, in the 4-7th examples of the above, if a coupler 6, the stop pawl 15, and a bearing bracket 17 are formed in one with flexible synthetic resin and the stop pawl 15 is made to open and close by the elastic deformation of the bearing bracket 17, the pin 18 which supports the stop pawl 15 pivotably, and the spring 19 for energization are omissible.

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[Translation done.]

## \* NOTICES \*

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DESCRIPTION OF DRAWINGS

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## [Brief Description of the Drawings]

[Drawing 1] The perspective view of the dc-battery in which the 1st example of this invention is shown, and a coupler

[Drawing 2] The perspective view showing the 2nd example

[Drawing 3] The plugging chart of the 2nd example

[Drawing 4] The perspective view showing the 3rd example

[Drawing 5] The perspective view showing the 4th example

[Drawing 6] The part plan of the 4th example

[Drawing 7] The perspective view showing the 5th example

[Drawing 8] The perspective view showing the 6th example

[Drawing 9] 9 section expansion perspective view of drawing 8

[Drawing 10] The top view of the coupler in which the 7th example is shown

[Drawing 11] The 11 direction view Fig. of drawing 10

[Drawing 12] Drawing showing the 1st modification of the 1st example

[Drawing 13] Drawing showing the 2nd modification of the 1st example

[Drawing 14] Drawing showing the 3rd modification of the 1st example

[Drawing 15] Drawing showing the 4th modification of the 1st example

## [Description of Notations]

1 ... Dc-battery case

3 ... Guide projection

4, 41, and 42 ... Plus terminal (dc-battery terminal)

5 ... Minus terminal (dc-battery terminal)

6 ... Coupler

7 ... Guide slot

8, 81, and 82 ... Coupler terminal

9 ... Coupler terminal

10,101 102 ... Power cord

11 ... Power cord

12 ... Fuse holder

15 ... Stop pawl

16 ... The stopped section

22 ... Fuse holder

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[Translation done.]

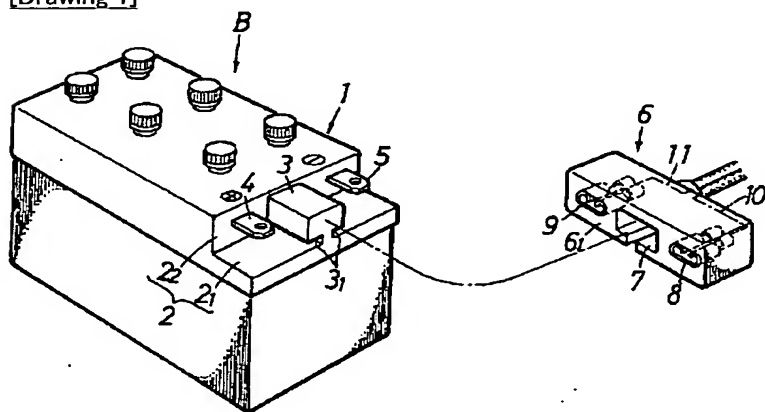
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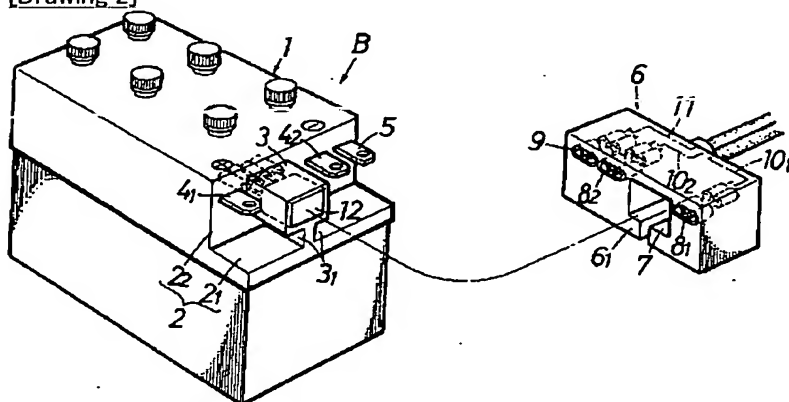
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## DRAWINGS

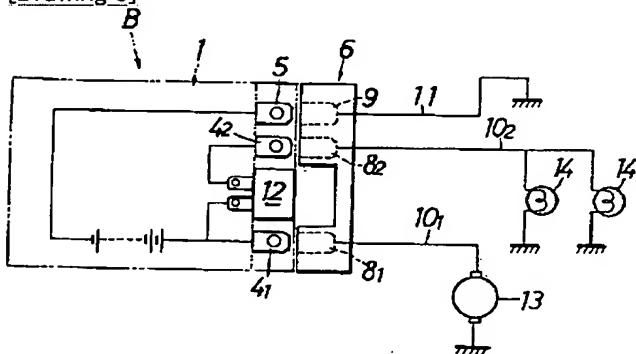
[Drawing 1]



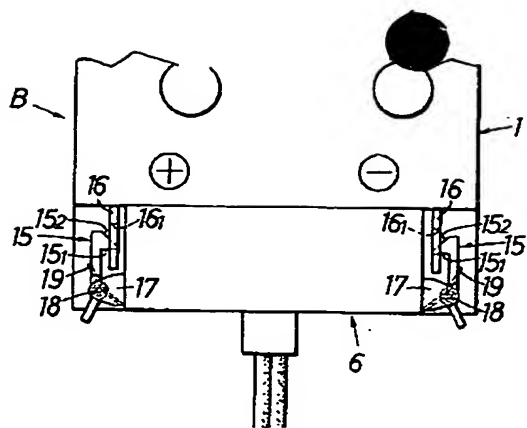
[Drawing 2]



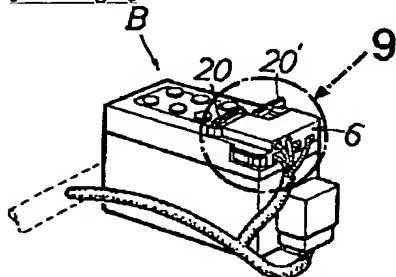
[Drawing 3]



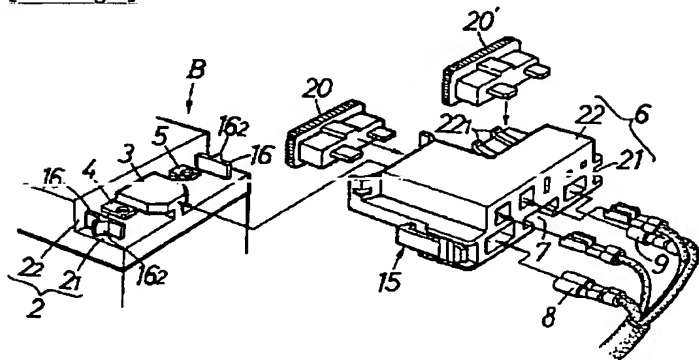
[Drawing 6]



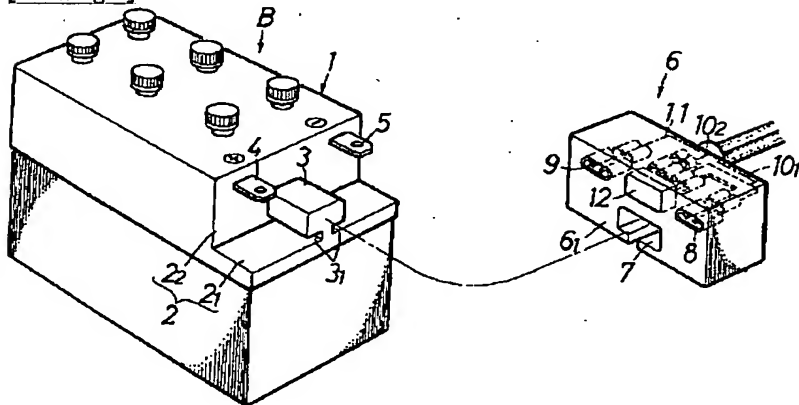
[Drawing 8]



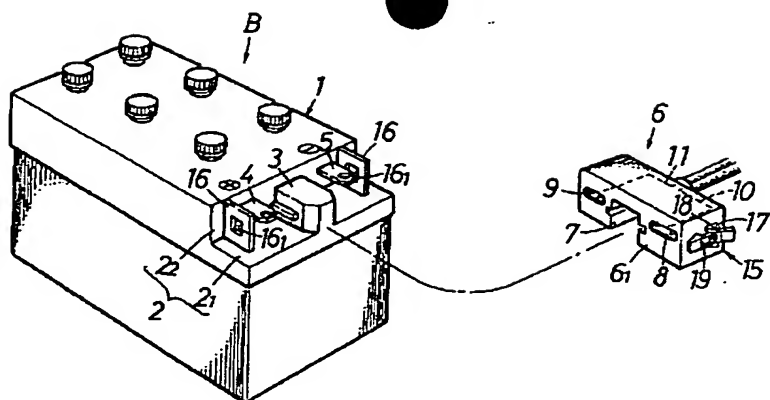
[Drawing 9]



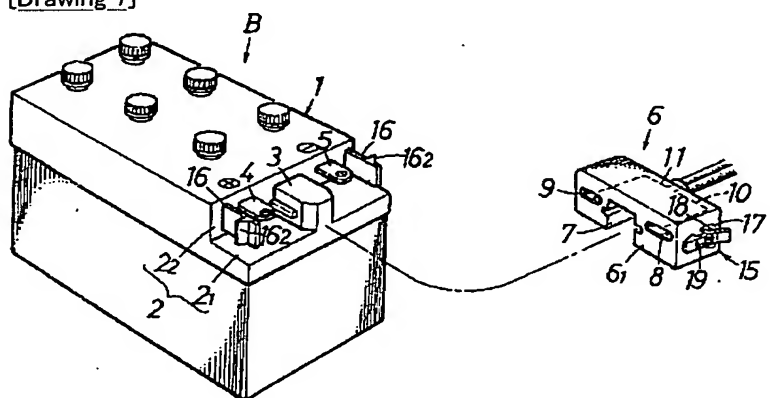
[Drawing 4]



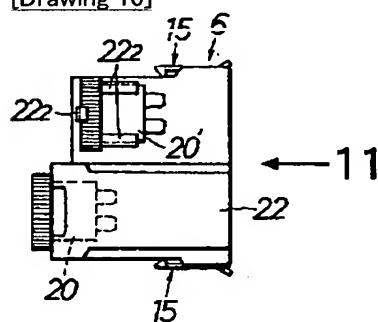
[Drawing 5]



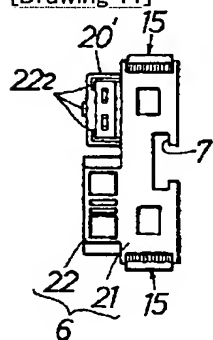
[Drawing 7]



[Drawing 10]

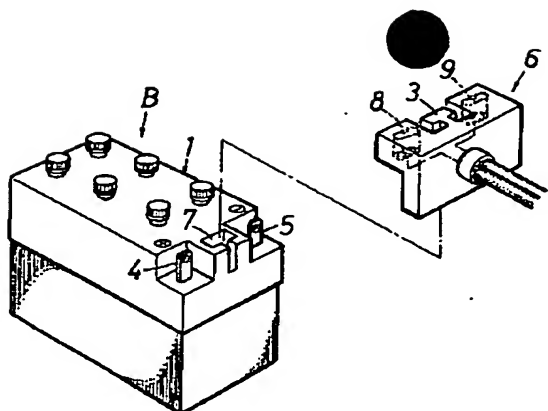


[Drawing 11]

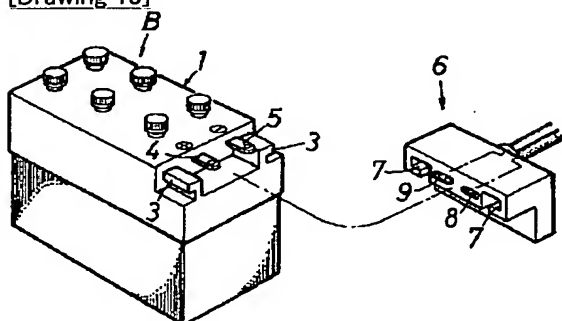


[Drawing 12]

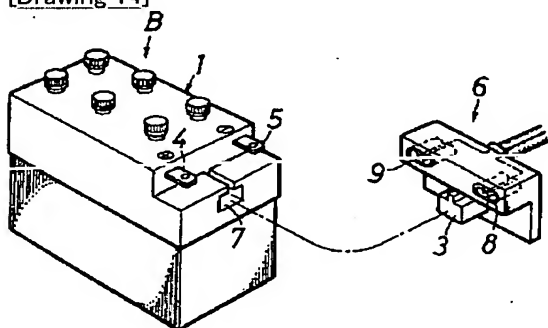




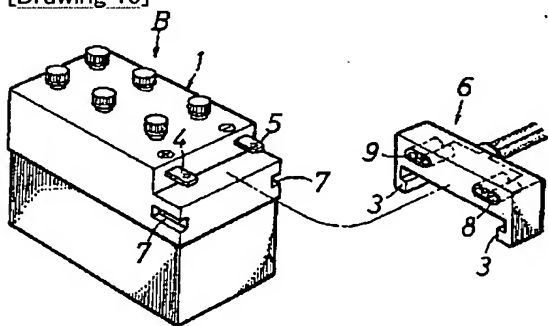
[Drawing 13]



[Drawing 14]



[Drawing 15]



[Translation done.]